



US009510740B2

(12) **United States Patent**
Hopkins et al.

(10) **Patent No.:** **US 9,510,740 B2**
(45) **Date of Patent:** ***Dec. 6, 2016**

(54) **AUTO RECOGNITION OF A SHAVER BLADE FOR MEDICAL USE**

(75) Inventors: **Vernon Hopkins**, Worcester, MA (US);
Marc R. Amling, Santa Barbara, CA (US); **David Chatenever**, Santa Barbara, CA (US)

(73) Assignee: **Karl Storz Endovision, Inc.**, Charlton, MA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1377 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **12/123,089**

(22) Filed: **May 19, 2008**

(65) **Prior Publication Data**

US 2008/0211634 A1 Sep. 4, 2008

Related U.S. Application Data

(63) Continuation-in-part of application No. 11/542,461, filed on Oct. 3, 2006, which is a continuation-in-part of application No. 10/095,616, filed on Mar. 12, 2002, now Pat. No. 7,289,139.

(51) **Int. Cl.**
A62B 1/04 (2006.01)
A61B 1/06 (2006.01)
(Continued)

(52) **U.S. Cl.**
CPC **A61B 1/042** (2013.01); **A61B 1/0002** (2013.01); **A61B 1/00016** (2013.01);
(Continued)

(58) **Field of Classification Search**

CPC A61B 1/00059; A61B 5/150763;
A61B 90/90; A61B 2017/00017; A61B
17/32; A61B 2018/14156

(Continued)

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,475,540 A 10/1984 Takamatsu et al.
4,478,212 A 10/1984 Asano

(Continued)

FOREIGN PATENT DOCUMENTS

CA 2604858 A1 4/2008
DE 19732442 2/1998

(Continued)

OTHER PUBLICATIONS

Microchip, 1K/2K/4K 1.8V Microwire Serial EEPROM, Microchip Technology Inc., 1996, 12 Pages.

(Continued)

Primary Examiner — Tom Y Chang

(74) *Attorney, Agent, or Firm* — Whitmyer IP Group LLC

(57) **ABSTRACT**

A system for automatically identifying a blade that is connected to a hand piece based on data transmitted from the blade to the hand piece. The blade is provided with a first electronic coupler that communicates with a second electronic coupled positioned in the hand piece such that data related to the blade is transmitted to the hand piece and controllers/computers and in the case of reusable blades, updated data is transmitted to the blade to be saved in a memory coupled to the first electronic coupler. The coupling system can be either a hard wired or wireless coupling between the blade and the hand piece.

19 Claims, 5 Drawing Sheets

